

## **Prof. NİYAZİ ALPER TAPAN**

### **Personal Information**

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### **Education Information**

Doctorate, Illinois Institute of Technology, United States Of America 1999 - 2003

Postgraduate, Middle East Technical University, Faculty Of Engineering, Department Of Chemical Engineering, Turkey  
1996 - 1999

Undergraduate, Middle East Technical University, Faculty Of Engineering, Department Of Chemical Engineering, Turkey  
1992 - 1996

### **Foreign Languages**

English, C1 Advanced

### **Research Areas**

Engineering and Technology

### **Academic Titles / Tasks**

Professor, Gazi University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 2017 - Continues

Associate Professor, Gazi University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 2010 - Continues

Assistant Professor, Gazi University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 2007 - 2010

Lecturer PhD, Gazi University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 2005 - 2007

Research Assistant, Gazi University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 2003 - 2005

Research Assistant, Gazi University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 1999 - 2003

Research Assistant, Middle East Technical University, Faculty Of Engineering, Department Of Chemical Engineering, 1996  
- 1999

### **Academic and Administrative Experience**

Uygulama ve Araştırma Merkezi Yönetim Kurulu Üyesi, Gazi University, 2017 - 2020

### **Advising Theses**

TAPAN N. A. , Investigation Of Rare Earth Element Containing Electrocatalysts On Hydrogen Evolution Reaction,  
Postgraduate, B.TARAKÇI(Student), 2020

TAPAN N. A. , Synthesis And Characterization Of Composite Electro-Catalyst For Hydrogen Production, Doctorate,  
A.ZARRABI(Student), 2020

TAPAN N. A. , Hidrotermal şartlarda Marn kullanımı ile biyodizel üretimi, Postgraduate, B.NAJAFOV(Student), 2016  
TAPAN N. A. , Production Of Biodiesel Under Hydrothermal Conditions Using Marl, Postgraduate, B.Najafov(Student), 2016  
TAPAN N. A. , Synthesis of nanorod and defining electro-catalyst activity, Postgraduate, U.ZHUMATAYEVA(Student), 2012  
TAPAN N. A. , Doğrudan 2-propanol yakıt hücresinin performans analizi, Postgraduate, E.ALEMDAR(Student), 2010  
TAPAN N. A. , 2-PROPANOL YAKIT HÜCREŞİNİN PERFORMANS ANALİZİ, Postgraduate, E.ALEMDAR(Student), 2010  
TAPAN N. A. , INVESTIGATING OF DIRECT ETHANOL FUEL CELL USAGE POTENTIALS OF (NON Pt BASED) BINARY TRANSITION METALS, Postgraduate, Ö.YILDIZ(Student), 2009  
TAPAN N. A. , Platin içermeyen ikili geçiş metallerinin doğrudan etanol yakıt hücresinde uygulanma potansiyellerinin incelenmesi, Postgraduate, Ö.YILDIZ(Student), 2009  
TAPAN N. A. , Ereğli yüksek basınç doğalgaz boru hattının katodik koruma sisteminin değişik anot materyalleri kullanılarak optimizasyonu, Postgraduate, F.MEHMET(Student), 2006

## Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **Analysis and modeling of high-performance polymer electrolyte membrane electrolyzers by machine learning**  
Tapan N. A. , Günay M. E. , Akkoç G.  
International Journal Of Hydrogen Energy, vol.47, no.4, pp.2134-2151, 2022 (Journal Indexed in SCI)
- II. **Significant parameters and technological advancements in biodiesel production systems**  
Gunay M. E. , Turker L., TAPAN N. A.  
FUEL, vol.250, pp.27-41, 2019 (Journal Indexed in SCI)
- III. **Decision tree analysis for efficient CO<sub>2</sub> utilization in electrochemical systems**  
Gunay M. E. , Turker L., TAPAN N. A.  
JOURNAL OF CO<sub>2</sub> UTILIZATION, vol.28, pp.83-95, 2018 (Journal Indexed in SCI)
- IV. **Analysis of past experimental data in literature to determine conditions for high performance in biodiesel production**  
TAPAN N. A. , Yildirim R., Gunay M. E.  
BIOFUELS BIOPRODUCTS & BIOREFINING-BIOFPR, vol.10, no.4, pp.422-434, 2016 (Journal Indexed in SCI)
- V. **Constructing global models from past publications to improve design and operating conditions for direct alcohol fuel cells**  
TAPAN N. A. , Gunay M. E. , YILDIRIM R.  
CHEMICAL ENGINEERING RESEARCH & DESIGN, vol.105, pp.162-170, 2016 (Journal Indexed in SCI)
- VI. **Ceria Based Nano-composite Synthesis for Direct Alcohol Fuel Cells**  
TAPAN N. A. , Cacan U. B. , VARIŞLI D.  
INTERNATIONAL JOURNAL OF ELECTROCHEMICAL SCIENCE, vol.9, no.8, pp.4440-4464, 2014 (Journal Indexed in SCI)
- VII. **Simulation of impedance spectra of oxalic acid electroreduction to glyoxylic acid: effect of chemical activator, pH, activation energy, and reduction potential**  
Tapan N. A.  
TURKISH JOURNAL OF CHEMISTRY, vol.38, no.1, pp.127-141, 2014 (Journal Indexed in SCI)
- VIII. **DETERMINATION OF ETHANOL AND CARBON MONOXIDE ELECTRO-OXIDATION ACTIVITIES OF PtRuC/CeO<sub>2</sub> COMPOSITE ELECTRO-CATALYSTS**  
TAPAN N. A. , Zhumatayeva U., Gokkaya E.  
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.28, no.4, pp.819-829, 2013 (Journal Indexed in SCI)
- IX. **TRANSESTERIFICATION REACTION OVER BASIC AMBERLYST RESIN CATALYSTS AND OPTIMIZATION VIA RESPONSE SURFACE METHODOLOGY**  
OKTAR N., Ozbay N., Aydin F., TAPAN N. A.  
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.27, no.1, pp.71-79,

2012 (Journal Indexed in SCI)

- X. **Synthesis and Characterization of Pt-Sn Incorporated MCM-41 and Pt Incorporated Sn-SiO<sub>2</sub> Type Mesoporous Catalysts for Direct Ethanol Fuel Cell**  
VARIŞLI D., Rona T., TAPAN N. A.  
INTERNATIONAL JOURNAL OF CHEMICAL REACTOR ENGINEERING, vol.8, 2010 (Journal Indexed in SCI)
- XI. **ELECTROLUMINESCENT PROPERTIES OF CERTAIN POLYAROMATIC COMPOUNDS: PART 1- CHARACTERISTICS OF OLED DEVICES BASED ON FLUORESCENT POLYAROMATIC DOPANTS**  
Turker L., Tapan A., Gümüş S.  
POLYCYCLIC AROMATIC COMPOUNDS, vol.29, no.3, pp.123-138, 2009 (Journal Indexed in SCI)
- XII. **ELECTROLUMINESCENT PROPERTIES OF CERTAIN POLYAROMATIC COMPOUNDS: PART 2-ORGANIC EMITTERS**  
Turker L., Tapan A., Gümüş S.  
POLYCYCLIC AROMATIC COMPOUNDS, vol.29, no.3, pp.139-159, 2009 (Journal Indexed in SCI)
- XIII. **Characterization of Cerium Oxide and Carbon Supported Ag-Cu Electro-Catalysts for Anode Electrode in Direct Ethanol Fuel Cells**  
TAPAN N. A. , Koek A.  
CHEMICAL ENGINEERING COMMUNICATIONS, vol.196, pp.131-147, 2009 (Journal Indexed in SCI)
- XIV. **Performance analysis for direct 2-propanol fuel-cell based on Pt containing anode electrocatalysts**  
Tapan N. A. , Ozturk E.  
TURKISH JOURNAL OF CHEMISTRY, vol.33, no.4, pp.487-499, 2009 (Journal Indexed in SCI)
- XV. **Biohydrogen production: molecular aspects**  
Turker L., Gümüş S., Tapan A.  
JOURNAL OF SCIENTIFIC & INDUSTRIAL RESEARCH, vol.67, no.11, pp.994-1016, 2008 (Journal Indexed in SCI)
- XVI. **Esterification of free fatty acids in waste cooking oils (WCO): Role of ion-exchange resins**  
Oezbay N., Oktar N., Tapan N. A.  
FUEL, vol.87, pp.1789-1798, 2008 (Journal Indexed in SCI)
- XVII. **A mechanistic approach to elucidate ethanol electro-oxidation**  
TAPAN N. A.  
TURKISH JOURNAL OF CHEMISTRY, vol.31, no.5, pp.427-443, 2007 (Journal Indexed in SCI)

## Articles Published in Other Journals

- I. **Data Mining and Application of Decision Tree Modelling on Electrochemical Data Used for Damaged Starch Detection**  
Tapan N. A. , Yıldırım N.  
Gazi University Journal of Science Part A: Engineering and Innovation, vol.8, no.4, pp.435-450, 2021 (International Refereed University Journal)
- II. **PEM Elektrolizörler İçin Düşük Platin Yüklemeli Serya Kompozit Destekli Elektrokatalizörlerin İncelenmesi**  
TAPAN N. A.  
Yuzuncu Yil University Journal of the Institute of Natural and Applied Sciences, vol.24, no.1, pp.9-21, 2019 (Other Refereed National Journals)
- III. **CO<sub>2</sub> electroreduction on P4VP modified copper deposited gas diffusion layer electrode: pH effect**  
TAPAN N. A.  
MATERIALS FOR RENEWABLE AND SUSTAINABLE ENERGY, vol.5, no.4, 2016 (Journal Indexed in ESCI)
- IV. **A short communication on the corrosion behavior O<sub>2</sub> reduction and methanol oxidation activity of stainless steel 304 after biofilm formation in black seawater**  
TAPAN N. A. , Zan M.  
Gazi University Journal of Science, vol.25, no.2, pp.477-483, 2012 (Other Refereed National Journals)
- V. **Determination of Methanol Decomposition Mechanism on polycrystalline Platinum Electrode**

Tapan N. A. , Prakash J.

Turkish Journal of Engineering and Environmental Sciences, vol.29, pp.95-103, 2005 (Other Refereed National Journals)

**VI. Investigation of Methanol Oxidation on Polycrystalline Pt Importance of Water gas shift Reaction**

TAPAN N. A. , Prakash J.

Turkish Journal of Engineering and Environmental Sciences, vol.29, pp.129-142, 2005 (Other Refereed National Journals)

## **Books & Book Chapters**

**I. Elektrokimyanın Temelleri Fundamentals of Electrochemistry**

TAPAN N. A. , AKSU M. L.

Nobel Yayinevi, 2015

**II. KİMYA MÜHENDİSLİĞİNDE TEMEL İLKELER VE HESAPLAMALAR Basic Principles and Calculations In Chemical Engineering**

MUTLU S. F. , SARIMEŞELİ PAÇACI A., TAPAN N. A. , ERDOĞAN S.

Nobel Yayinevi, 2014

**III. Proses Dinamiği ve Kontrolü Process Dynamics and Control**

Tapan N. A. , Erdoğan S.

Nobel Yayinevi, Ankara, 2012

## **Refereed Congress / Symposium Publications in Proceedings**

**I. Determination of Damaged Starch Amount Based on Iodine Detection by Graphene Based Electrodes**

Tapan N. A. , Yıldırım N.

NCC-8 National Catalysis Congress, Ankara, Turkey, 9 - 12 September 2021, pp.120

**II. Composite Electro-catalyst Synthesis for Hydrogen Production**

ZARRABİ A., TAPAN N. A.

International Conference on Advanced Materials Science & Engineering and High Tech Devices Applications; Exhibition, Ankara, Turkey, 02 October 2020, pp.30

**III. A Study on Low Pt Loaded Metal Ceria Based Catalysts for Stable PEM Electrolyzers**

TAPAN N. A.

Electrochem 2019, 30 September 2020

**IV. Machine Learning on Electrocatalytic reduction of CO<sub>2</sub> for Preventing Atmospheric Pollution and Producing Valuable Chemicals**

TAPAN N. A. , GÜNAY M. E. , TÜRKER B. L.

2019 International Conference on Green Energy and Environmental Technology (GEET-19), 24 July 2020

**V. Performance analysis for 2 propanol and direct methanol fuel cells based on Pt containing anode electrocatalysts**

Tapan N. A. , Öztürk E.

2nd National Catalysis Conference, Erzurum, Turkey, 18 - 21 June 2008, pp.81

**VI. CO<sub>2</sub> electroreduction on P4VP modified copper deposited gas diffusion layer electrode pH effect**

TAPAN N. A. , Koper M., Ruud K.

6th Baltic Electrochemistry Conference, 15 - 17 June 2016

**VII. Characterization of Ceria Nano-composites and Their Performance of in Direct Alcohol Fuel Cells**

TAPAN N. A. , Cacan U., VARIŞLI D.

Characterization of Ceria Nano-composites and Their Performance of in Direct Alcohol Fuel Cells, Adana, Turkey, 23 - 26 April 2014

**VIII. Effect of Marl on the Production of Biodiesel as a Heterogeneous Catalyst**

NAJAFOV B., TAPAN N. A.

NCC6 The 6th Catalysis Conference, 27 - 30 April 2016

- IX. **Electroreduction of CO<sub>2</sub> on PVP loaded copper electrodes supported on gas diffusion layer**  
TAPAN N. A. , Koper M., Kortlever R.  
Electrochem 2015, TU Delft, Netherlands, 28 September 2015
- X. **Ceria Nano composite Synthesis for Direct Alcohol Fuel Cells**  
TAPAN N. A.  
11th European Congress on Catalysis – EuropaCat-XI, Lyon, France, 1 - 06 September 2013
- XI. **Nano çubuk sentezi ve Elektrokatalitik Aktivitesinin Belirlenmesi**  
Zhutmatayeva U., TAPAN N. A.  
UKMK 10,Koç Üniversitesi, İstanbul, Turkey, 3 - 06 September 2012
- XII. **Doğrudan Alkol Yakıt Hücreleri için Seryum Nano Kompozit Çubuk Sentezi**  
TAPAN N. A. , Gökkaya E.  
UKMK 10 , Koç Üniversitesi, İstanbul, Turkey, 3 - 06 September 2012
- XIII. **Ceria Composite Nano rod for PEM Fuel Cells**  
TAPAN N. A. , Gökkaya E.  
National Catalysis Congress, NCC4, Turkey, 21 - 24 March 2012
- XIV. **Electrokinetic Investigation of Oxalic Acid Electroreduction by the Simulation of Impedance Spectrum Activator Effect**  
TAPAN N. A. , Göçmenoğlu A.  
National Catalysis Congress, NCC4, Turkey, 21 - 24 March 2012
- XV. **Investigation of Combined Effect of co solvents on soybean Transesterification Kinetics**  
TAPAN N. A. , OKTAR N.  
6th EFCAT Summer School, 13 - 19 September 2010
- XVI. **The Promoting Effect of AgCu CeO<sub>2</sub> on Pt C in direct ethanol fuel cells**  
TAPAN N. A. , Yıldız Ö.  
19th International Congress of Chemical and Process Engineering CHISA, 28 August - 01 September 2010
- XVII. **Amberlit A 26 Katalizörü Varlığında Biyodizel Üretimi**  
Aydın F., Özbay N., OKTAR N., TAPAN N. A.  
UKMK-9 , Gazi Üniversitesi, Ankara, Turkey, 22 - 25 June 2010
- XVIII. **uç durum değişkenine bağlı olarak 2 propanol Elektro oksidasyon mekanizmasının empedans spektrum simülasyonu ile incelenmesi**  
TAPAN N. A.  
UKMK-9 , Gazi Üniversitesi, Ankara., Turkey, 22 - 25 June 2010
- XIX. **Düşük Pt ve Ru Yüklenmiş Fe Ni İkili Metallerin Elektrokimyasal Performanslarının Doğrudan Etanol Yakıt Hücrelerinde Anot Elektrotu olarak değerlendirilmesi**  
TAPAN N. A. , Yıldız Ö.  
3rd National Catalysis Congress,NCC3, Turkey, 28 April - 01 May 2010
- XX. **Synthesis and Characterization of Pt@MCMC-41 and Pt-Sn@MCM-41 Mesoporous Catalysts for Direct Ethanol Fuel Cell**  
Rona T., VARIŞLI D., TAPAN N. A.  
NCC-3 3rd National Catalysis Congress, Zonguldak, Turkey, 28 April 2010
- XXI. **Soybean Oil Transesterification Reaction Kinetics Effect of THF solvent**  
TAPAN N. A. , OKTAR N.  
EuropaCat IX, 30 August - 04 September 2009
- XXII. **Performance analysis for 2 propanol and direct methanol fuel cells based on Pt containing anode electrocatalysts**  
TAPAN N. A. , Öztürk E.  
Second National Catalysis Conference (NCC-2), Turkey, 18 - 21 June 2008
- XXIII. **Kanola Yağının Alumina ve Alumina Silikat Destekli Heterojen Katalizörler Varlığında Transesterifikasyonu**

- Mumcu Ö., Özbay N., OKTAR N., TAPAN N. A.  
23. Ulusal Kimya Kongresi,Sivas, Türkiye, Turkey, 16 - 20 June 2009
- XXIV. **Soya Yağından Biyodizel üretim Reaksiyon Kinetiğinin İncelenmesi**  
Aydemir B., Gülderen A., TAPAN N. A. , OKTAR N.  
21. Ulusal Kimya Kongresi, Malatya, Turkey, 23 - 27 August 2007
- XXV. **Atık Yağlardaki Serbest Yağ Asitlerinin Heterojen Katalizörler İle Esterifikasyonu**  
Özbay N., OKTAR N., TAPAN N. A.  
21. Ulusal Kimya Kongresi,Malatya, Turkey, 23 - 27 August 2007
- XXVI. **Characterization of Cerium Oxide and Carbon Supported Ag Cu Electrocatalysts for Anode Electrode in Direct Ethanol Fuel Cells**  
TAPAN N. A. , KÖK A.  
Somer Symposium Series 1, 14 - 15 May 2007
- XXVII. **A Mechanistic Approach To Elucidate Ethanol Electro oxidation**  
TAPAN N. A.  
First National Catalysis Conference (NCC-1),11, Güzelyurt, Northern Cyprus, Turkey, 17 - 20 January 2007
- XXVIII. **Platin Disk Elektrotlarda Etanol Elektro oksidasyon mekanizmasının modellenerek incelenmesi**  
TAPAN N. A.  
7. Ulusal Kimya Mühendisliği Kongresi,Eskişehir., Turkey, 5 - 08 September 2006
- XXIX. **Determination of Anode Electrokinetic Mechanism in a Direct Methanol Fuel Cell by Asymmetric Electrode Technique**  
TAPAN N. A. , William M., Prakash J.  
International Hydrogen Energy Congress and Exhibition IHEC2005, 13 - 15 July 2005
- XXX. **Investigation of Methanol Oxidation Electrokinetics on Pt Ru Anode Catalyst**  
TAPAN N. A. , Gurau B., Sandi G., Jai P.  
5th International Symposium on New Materials for Electrochemical Systems, 6 - 11 July 2003
- XXXI. **From Catalysis to Gas Sensors A Venue at Spillover**  
TAPAN N. A. , ÜNER D.  
16th meeting of the North American Catalysis Society, 30 May - 04 June 1999

## Other Publications

- I. **2-Propanol Yakıt Hücresinin Performans Analizi (Yönetilen Tez)**  
Tapan N. A. , Öztürk E.  
Other, pp.1-62, 2010

## Supported Projects

- TAPAN N. A. , Project Supported by Higher Education Institutions, Atık Yağ İçeriğindeki Serbest Yağ Asitlerinin Esterifikasyonunda Heterojen Katalizörlerin Kullanılması, 2008 - Continues
- TAPAN N. A. , Project Supported by Higher Education Institutions, Seryum Oksit ve Aktive Edilmiş Karbon Destekli İkili Geçiş Metallerinin Direk Alkol Yakıt Hücresi Performanslarının Tespit Edilmesi, Spektroskopik ve Elektrokimyasal Karakterizasyonlarının Yapılması, 2007 - Continues
- TAPAN N. A. , Project Supported by Higher Education Institutions, Doğrudan Metanol Yakıt Pillerinde Water-Gaz Shift Tepkimesini Artıran Katalizörlerin Geliştirilmesi ve Karakterizasyonu, 2005 - Continues
- TAPAN N. A. , Project Supported by Higher Education Institutions, İyot tayinine dayalı yenilikçi bir elektrokimyasal sistemle zedelenmiş nişasta miktarının grafen temelli elektrotlar üzerinde tespit edilmesi, 2018 - 2022
- TAPAN N. A. , Project Supported by Higher Education Institutions, PEM elektrolizörleri için seryum içerikli kararlı elektrokatalizörlerin sentezi ve karakterizasyonu, 2016 - 2019
- TAPAN N. A. , Project Supported by Higher Education Institutions, Atık suyun Elektrokoagülasyon yöntemi ile arıtılması,

2012 - 2014

Tapan N. A. , Varışlı D., TUBITAK Project, Doğrudan Alkol Yakıt Hücreleri için Düşük Pt Yükleme Seryum Nanokompozit Katalizör Sentez ve Karakterizasyonu, 2012 - 2014

TAPAN N. A. , Project Supported by Higher Education Institutions, Yakıt hücreleri için kompozit nano-çubuk sentezi ve karakterizasyonu, 2011 - 2013

TAPAN N. A. , Project Supported by Higher Education Institutions, 2-propanol Yakıt Hücresinin Performans Analizi, 2009 - 2012

## **Citations**

Total Citations (WOS):331

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